

ADDITIONAL NOTES ON THE ERIOCAULACEAE. LXV

Harold N. Moldenke

LACHNOCAULON Kunth

It should be noted here that Stapf (1930) regards "1906" as the proper date of publication for the Pilger (1908) work cited in the bibliography of this genus, although the United States Library of Congress catalogue card for the work retains the 1908 title-page date.

Macbride (1931) feels that Lachnocalon, along with Syngonanthus, Blastocalon, and Philodice, should be united with Paepalanthus as a single genus. In my opinion, Paepalanthus is large and cumbersome enough already, with its many disparate elements, without adding more!

LACHNOCAULON ANCEPS (Walt.) Morong

Additional bibliography: Holm, Bot. Gaz. 31: 18 & 33. 1901; Gleason, New Britt. & Br. Illustr. Fl., imp. 1, 1: 372, 374, & 480 (1952), imp. 1, 3: 568, 574, & 582 (1952), imp. 2, 1: 372, 374, & 480 (1958), imp. 2, 3: 568, 574, & 582 (1958), imp. 3, 1: 372, 374, & 480 (1963), and imp. 3, 3: 568, 574, & 582. 1963; G. W. Thomas, Tex. Pl. Ecolog. Summ. 32. 1969; Hocking, Excerpt. Bot. A.26: 89 & 90. 1975; Moldenke, Phytologia 33: 20-21. 1976.

Additional illustrations: Gleason, New Britt. & Br. Illustr. Fl., imp. 1, 1: 373 (1952), imp. 2, 1: 373 (1958), and imp. 3, 1: 373. 1963.

D'Arcy describes the flower-heads of this species as "chalky gray-white" and found the species to be "frequent" in Alachua County, Florida. Correll found it growing "in clumps" on savannas, flowering in May. Thomas (1969) calls it the "whitehead bogbutton".

Additional citations: FLORIDA: Alachua Co.: D'Arcy 1602 (Sd—86665). TEXAS: Tyler Co.: D. S. Correll 37248 (Sd—73934).

LACHNOCAULON FLORIDANUM Small

Additional bibliography: Moldenke, Phytologia 29: 286. 1974. The Schallert 26274, distributed as L. floridanum, actually is L. mimus (Chapm.) Small.

LACHNOCAULON MINUS (Chapm.) Small

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89 & 90. 1975; Moldenke, Phytologia 33: 21. 1976.

This species quite generally inhabits wet places throughout its range. Material has been misidentified and distributed in some herbaria as L. floridanum Small.

Additional citations: FLORIDA: Seminole Co.: Schallert 26274 (Sd—72822).

**LEIOTHRIX Ruhl.**

Additional bibliography: Pilger in Engl. & Prantl, Nat. Pflanzenfam. Ergänz. 2, Nachtr. 3 zu 2: 37, 39, & 40. 1908; Hocking, Excerpt. Bot. A.26: 89 & 90. 1975; Moldenke, Phytologia 33: 21—24, 36, 186, 198, 202, 374, & 509 (1976) and 34: 256, 258, 275, 276, & 505. 1976; P. Morat, Adansonia, ser. 2, 15: 464 & 468. 1976.

It should be noted here that Stapf (1930) regards "1906" as the correct date of publication for the Pilger work (1908) cited above.

**LEIOTHRIX AFFINIS Alv. Silv.**

Additional bibliography: Moldenke, Phytologia 29: 288. 1974; Hocking, Excerpt. Bot. A.26: 90. 1975.

**LEIOTHRIX ARECHAVALETAE (Körn.) Ruhl.**

Additional bibliography: Moldenke, Phytologia 33: 22. 1976; P. Morat, Adansonia, ser. 2, 15: 464. 1976.

**LEIOTHRIX ARGYRODERMA Ruhl.**

Additional bibliography: Moldenke, Phytologia 25: 96 (1972), 28: 439 (1974), and 29: 288. 1974.

Lindeman and Haas encountered this plant "in low vegetation on saddle of planalto", flowering and fruiting in April.

Additional citations: BRAZIL: Rio de Janeiro: Lindeman & Haas 5193 (Ld).

**LEIOTHRIX CURVIFOLIA (Bong.) Kuhl.**

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89. 1975; Moldenke, Phytologia 33: 22. 1976.

**LEIOTHRIX CURVIFOLIA var. GLABRESCENS Ruhl.**

Additional bibliography: Moldenke, Phytologia 26: 44. 1973; Hocking, Excerpt. Bot. A.26: 89. 1975.

Occhioni affirms that the scapes of this plant are to 10 cm. long and the flower-heads white. He encountered the plant "in loco encharcado", flowering and fruiting in June.

Additional citations: BRAZIL: Minas Gerais: Occhioni 5095 [Herb. Fac. Nac. Farmac. 13197] (Z).

**LEIOTHRIX CURVIFOLIA var. MICROPHYLLA Alv. Silv.**

Additional bibliography: Moldenke, Phytologia 29: 288. 1974; Hocking, Excerpt. Bot. A.26: 89. 1975.

**LEIOTHRIX DIELSII Ruhl.**

Additional bibliography: Moldenke, Phytologia 29: 289 (1974), 33: 374 (1976), and 34: 258. 1976.

**LEIOTHRIX DIELSII var. VILAVELHENSIS Moldenke, Phytologia 33:**

374. 1976.

Bibliography: Moldenke, Phytologia 33: 374 (1976) and 34: 258. 1976.

Citations: BRAZIL: Espirito Santo: Araujo 377 [A. L. Peixoto 247; Herb. Jard. Bot. Rio Jan. 164991] (N-type).

LEIOTHRIX FULGIDA Ruhl.

Additional bibliography: Moldenke, Phytologia 26: 45. 1973; Hocking, Excerpt. Bot. A.26: 89. 1975.

LEIOTHRIX HIRSUTA (Wikstr.) Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 23 (1976) and 34: 258. 1976; P. Morat, Adansonia, ser. 2, 15: 464. 1976.

Luna Peixoto describes this plant as "heliofila, crescendo em areia mais seca, capitula branco" and found it in flower and fruit in January. Occhioni found it in "local alagado", the flowers white, in June.

Additional citations: BRAZIL: Espirito Santo: Luna Peixoto 366 [Araujo & Peixoto 615; Herb. Jard. Bot. Rio Jan. 169708] (Ld). Rio de Janeiro: Occhioni 2289 [Herb. Fac. Nac. Farmac. 7990] (Ld).

LEIOTHRIX HIRSUTA var. BLANCHETIANA (Körn.) Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 23. 1976; P. Morat, Adansonia, ser. 2, 15: 464. 1976.

LEIOTHRIX LUXURIANS (Körn.) Ruhl.

Additional synonymy: Syngonanthus luxurians (Körn.) Ruhl. ex Mendes Magalhães, Anais V Reun. Anual Soc. Bot. Bras. 236--237, 266--267, & 276--277. 1956.

Additional bibliography: Mendes Magalhães, Anais V Reun. Anual Soc. Bot. Bras. 236--237, 266--267, & 276--277. 1956; Moldenke, Phytologia 29: 291 (1974) and 34: 278. 1976.

Mendes Magalhães asserts (1956) that this species flowers from August to January.

LEIOTHRIX VIVIPARA (Bong.) Ruhl.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89 & 90. 1975; Moldenke, Phytologia 33: 24. 1976.

LEIOTHRIX VIVIPARA var. ANGUSTA Ruhl.

Additional bibliography: Moldenke, Phytologia 29: 291. 1974; Hocking, Excerpt. Bot. A.26: 90. 1975.

LEIOTHRIX VIVIPARA var. LONGIPILOSA Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89. 1975; Moldenke, Phytologia 33: 24. 1976.

MESANTHEMUM Körn.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89 & 90. 1975; Jaeger, Boissiera 24: 474. 1976; Moldenke, Phytologia 33: 24--26, 191, & 510 (1976) and 34: 395. 1976; P. Morat, Adansonia, ser. 2, 15: [463] & 468. 1976.

**MESANTHEMUM AFRICANUM** Moldenke

Additional bibliography: Moldenke, Phytologia 25: 140. 1973; Hocking, Excerpt. Bot. A.26: 89. 1975.

**MESANTHEMUM JAEGERI** Jacques-Félix

Additional bibliography: Moldenke, Phytologia 25: 139 & 140. 1973; Jaeger, Boissiera 24: 474. 1976.

**MESANTHEMUM PRESCOTTIANUM** (Bong.) Körn.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 25 & 26. 1976.

A photographic copy of the illustration of this species by Meikle & Baldwin (1952) is included on the United States National Herbarium sheet of Baldwin 9516.

Additional citations: LIBERIA: J. T. Baldwin 9516 (W--2070103). REPUBLIC OF GUINEA: J. T. Baldwin 9772 (W--2070105).

**MESANTHEMUM RADICANS** (Benth.) Körn.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89. 1975; Moldenke, Phytologia 33: 26, 189, & 191 (1976) and 34: 395. 1976.

Recent collectors refer to this species as 30--60 cm. tall.

Additional citations: LIBERIA: J. T. Baldwin 10052 (W--2070116), 12056 (W--2070218). ZAIRE: Devred 1465 (W--2319128).

**MESANTHEMUM RUTENBERGIANUM** Körn.

Additional bibliography: Moldenke, Phytologia 29: 293. 1974; Hocking, Excerpt. Bot. A.26: 89. 1975.

**MOLDENKEANTHUS P. Morat**, Adansonia, ser. 2, 15: [463]--469, pl. 1 & 2. 1976.

Bibliography: Moldenke, Phytologia 34: 262 & 506. 1976; P. Morat, Adansonia, ser. 2, 15: [463]--469, pl. 1 & 2. 1976.

A genus of two known species in Madagascar.

**MOLDENKEANTHUS BOSSERI** P. Morat, Adansonia, ser. 2, 15: 467--469, pl. 2. 1976.

Bibliography: Moldenke, Phytologia 34: 262. 1976; P. Morat, Adansonia, ser. 2, 15: 467--469, pl. 2. 1976.

Illustrations: P. Morat, Adansonia, ser. 2, 15: 467, pl. 2. 1976.

This species is based on Bosser 19567 from the Massif de l'Itremo, 1600 m. altitude, Central District, Madagascar, where it appears to be endemic.

**MOLDENKEANTHUS ITREMENSIS** P. Morat, Adansonia, ser. 2, 15: 465--467, pl. 1. 1976.

Bibliography: Moldenke, Phytologia 34: 262. 1976; P. Morat, Adansonia, ser. 2, 15: 465--467, pl. 1. 1976.

Illustrations: P. Morat, Adansonia, ser. 2, 15: 465, pl. 1. 1976.

This species is based on Morat 4263 from the Massif de l'Itremo, altitude 1600 m., Central District, Madagascar, where it appears to be endemic.

#### PAEPALANTHUS Mart.

Additional synonymy: Dupotya Kuntze ex Moldenke, Résumé 282, in syn. 1959. Dupataya Kuntze ex Moldenke, Résumé Suppl. 2: 31, in syn. 1962. Duptaya Kuntze ex Moldenke, Fifth Summ. 1: 487, in syn. 1971.

Additional bibliography: C. Müll. in Just, Bot. Jahresber. 16 (1): 769 & 770. 1888; Holm, Bot. Gaz. 31: 18. 1901; Lutz & Machado, Mem. Inst. Oswaldo Cruz 7: 15. 1915; Thorne in Meggers, Ayensu, & Duckworth, Trop. Forest Ecosyst. Afr. & S. Am. 29. 1973; Hocking, Excerpt. Bot. A.26: 6, 89, & 90. 1975; Liogier, Bol. Jard. Bot. Raf. Moscoso 3 (2): 2. 1976; Moldenke, Phytologia 33: 26--58, 130--153, fig. 1 & 2, 183--202, 271--275, 374, 508, & 510 (1976) and 34: 254, 256, 258, 259, 275--276, 281, 390, 391, 395, 502, & 507. 1976; P. Morat, Adansonia, ser. 2, 15: [463], 464, & 468. 1976; L. B. Sm., Phytologia 33: 430 & 431. 1976.

Thorne (1973) asserts that Paepalanthus is a genus of 485 species, of which 484 live in America, 2 in Africa, and 1 in Madagascar.

The Murça Pires & Cavalcante 52405, distributed as Paepalanthus sp., is actually Syngonanthus gracilis var. glabriusculus Ruhl.

#### PAEPALANTHUS ACANTHOLIMON Ruhl.

Additional bibliography: Moldenke, Phytologia 25: 143 (1973) and 29: 485. 1974; Hocking, Excerpt. Bot. A.26: 89. 1975; Moldenke, Phytologia 33: 150. 1976.

#### PAEPALANTHUS ACANTHOPHYLLUS Ruhl.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 27, 190--192, 195, & 196. 1976.

The Haases encountered this species "in graminosis humidis", describe the involucre as black, and found the plant in flower and fruit in September.

Additional citations: BRAZIL: Goiás: Haas & Haas 444 [Herb. Brad. 50554] (Ut—320407).

#### PAEPALANTHUS ACTINOCEPHALOIDES Alv. Silv.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89. 1975; Moldenke, Phytologia 33: 27. 1976.

#### PAEPALANTHUS ALBO-VAGINATUS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 33: 28. 1976.

Lindeman and Haas found this plant growing in a rocky campo and call attention to the "main peduncle [being] strongly flattened". Occhioni comments on the "capitulo branco acinzentado", and found the plant on sandy campos, flowering in November.

Additional citations: BRAZIL: Paraná: Lindeman & Haas 3033 (Ac), 3036 (Ld); Occhioni 4741 [Herb. Nac. Fac. Farmac. 11287] (Ld).

#### PAEPALANTHUS ALSINOIDES C. Wright

Additional synonymy: Dupatya alsinoides (Wright & Sauv.) Britton ex Moldenke, Phytologia 1: 332, in syn. 1939. Dupatya alsinoides Wr. & Sauv., in herb. Paepalanthus alsinoides Wright & Sauvalle, in herb.

Additional bibliography: Moldenke, Phytologia 33: 28 & 184. 1976.

Collectors have encountered this plant in white sand of pine-lands, flowering and fruiting in June and August. C. Wright 710 is a mixture with var. minimus Jennings, while C. Wright 3743 is a mixture with P. lamarckii Kunth, doubtless due to the notoriously poor assembling and distributing of Wright's collections by Asa Gray.

Additional citations: CURA: Pinar del Río: Britton, Britton, & Gager 7090 (W-696893), 7130 (W-696902); Ekman 16781 (W-1302672), 17284 (W-1301995); C. Wright 710, in part (W-936251), 3742 (W-936264), s.n. [1865] (W-287261).

#### PAEPALANTHUS ALSINOIDES var. MINIMUS Jennings

Additional bibliography: Moldenke, Phytologia 33: 28. 1976.

Killip found this plant growing on white sand savannas, flowering and fruiting in January. C. Wright 710 is a mixture of this variety with the typical form of the species.

Additional citations: CUBA: Pinar del Río: C. Wright 710, in part (W-936241). ISLA DE PINOS: Britton, Britton, & Wilson 11144 (W-793020, W-1049604); Ekman 11965 (W-1301980); Killip 4547 (W-2112712), 45388 (W-2226225); Shafer 10682 (W-699074).

#### PAEPALANTHUS AMOENUS (Bong.) Körn.

Additional bibliography: Moldenke, Phytologia 33: 28—29, 189, 191, 192, 194, & 196. 1976.

Haas and his associates encountered this plant on "stony slopes at the foot of a hill".

Additional citations: BRAZIL: Goiás: Haas, Haas, & Belém 364 (Ac).

#### PAEPALANTHUS ANDICOLA Körn.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 29 & 40 (1976) and 34: 256. 1976.

#### PAEPALANTHUS ANDICOLA var. VILLOSUS Moldenke

Additional bibliography: Moldenke, Phytologia 33: 29—30, fig. 1. 1976.

Illustrations: Moldenke, Phytologia 33: 29, fig. 1. 1976.

**PAEPALANTHUS ARGILLICOLA** Alv. Silv.

Additional bibliography: Moldenke, Phytologia 29: 296--297. 1974.

Recent collectors have encountered this plant in small groups in wet places on campos and in "local encharcado" associated with mosses, flowering and fruiting in March and July.

Additional citations: BRAZIL: Minas Gerais: Mendes Magalhães s.n. [Herb. Fac. Nac. Farmac. 5746] (Ld). Rio de Janeiro: P. Occhioni 7621 [Herb. Fac. Nac. Farmac. 16795] (Z); E. Pereira 3853 [Herb. Fac. Nac. Farmac 8967] (Ld).

**PAEPALANTHUS ARGYROPUS** Alv. Silv.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 89. 1975; Moldenke, Phytologia 33: 30. 1976.

**PAEPALANTHUS BATOCEPHALUS** Ruhl.

Additional bibliography: Moldenke, Phytologia 29: 297—298 (1974) and 30: 21 & 112. 1975.

Krapovickas encountered this plant at 2000 m. altitude, flowering and fruiting in January.

Additional citations: BRAZIL: Rio de Janeiro: Krapovickas 27240 (Z).

**PAEPALANTHUS BELIZENSIS** Moldenke

Additional bibliography: Moldenke, Phytologia 33: 31. 1976.

Dwyer found this plant growing on savannas, flowering and fruiting in May. Material has been misidentified and distributed in some herbaria as "Cyperaceae".

Additional citations: BELIZE: Dwyer 10719 (Z); McKee 11373 (P--isotype).

**PAEPALANTHUS BIFIDUS** (Schrad.) Kunth

Additional bibliography: Moldenke, Phytologia 33: 31—32. 1976.

Lindeman & Haas encountered this plant in a "burned but wet old dune valley with low savanna-like vegetation". Lasseigne found it on a "campina....near old borrow pit", in white sand, flowering and fruiting in July. He refers to the flower-heads as "buttons" and describes them as brownish-white.

Additional citations: BRAZIL: Amazônas: Lasseigne P.21169 (Ld). Pernambuco: Lindeman & Haas 6157 (Ut—320406).

**PAEPALANTHUS BIFIDUS f. BREVIPES** Moldenke

Additional bibliography: Moldenke, Phytologia 33: 31 & 32. 1976.

Prance found this plant growing in a swamp on dunes, flowering and fruiting in July. His label asserts that it was growing among plants 8 cm. tall (probable the typical form of the species).

Additional citations: BRAZIL: Pará: Prance 21155 (Z).

PAEPALANTHUS BIFRONS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 29: 300 (1974), 30: 274 (1975), and 33: 191. 1976.

Recent collectors found this plant in flower in May.

Additional citations: BRAZIL: Minas Gerais: Elena, Carmem, & Occhioni s.n. [Herb. Fac. Nac. Farmac. 11404] (2).

PAEPALANTHUS BOMBACINUS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 33: 32. 1976.

Occhioni and Carmem describe this plant as 20 cm. tall, with white flowers, and found it in flower in May.

Additional citations: BRAZIL: Minas Gerais: Occhioni & Carmem s.n. [Herb. Fac. Nac. Farmac. 11425] (Ld).

PAEPALANTHUS BRITTONI Moldenke

Additional bibliography: Moldenke, Phytologia 33: 32. 1976.

Recent collectors have found this plant in pinelands, flowering and fruiting in February and April. Material has been mis-identified and distributed in some herbaria as P. pungens Griseb.

Additional citations: CUBA: Oriente: Alain, Acuña, & López Figueiras 5881 (W-2288325); León, Clémonte, & Howard 20149 (W-2286854); López Figueiras 2483 (W-2284300).

PAEPALANTHUS BRYOIDES (Riedel) Kunth

Additional bibliography: Moldenke, Phytologia 33: 33. 1976.

Additional citations: BRAZIL: Minas Gerais: Duarte 15031 (Ld).

PAEPALANTHUS CALDENSIS Malme

Additional bibliography: Moldenke, Phytologia 33: 33. 1976.

Hatschbach encountered this plant on a "campo pequeño brejo", while Lindeman and his associates found it in a "banhado no planalto", on a "campo úmido na beira dura sanga", and as a rare clustered herb in open vegetation on a planalto, at 2350 m. altitude, the corollas "white".

Additional citations: BRAZIL: Paraná: Hatschbach 37921 (Ld). Rio de Janeiro: Lindeman & Haas 4135 (Ld). Rio Grande do Sul: Lindeman & al. ICN.20866 (Ut-320393); Lindeman, Lindeman, Porto, & "A. M. C." 9357 (Ut-320394).

PAEPALANTHUS CALLOCEPHALUS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 26: 139. 1973; Hocking, Excerpt. Bot. A.26: 89. 1975.

PAEPALANTHUS CALLOCEPHALUS var. CILIATUS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 26: 139. 1973; Hocking, Excerpt. Bot. A.26: 89. 1975.

PAEPALANTHUS CALLOCEPHALUS var. VILLOSUS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 26: 139-140.

1973.

Occhioni describes this plant as 50 cm. tall, with white flower-heads, and found it growing on sandy campos, flowering in June.

Additional citations: BRAZIL: Minas Gerais: Occhioni 5681 [Herb. Fac. Nac. Farmac. 14284] (Z).

**PAEPALANTHUS CANESCENS** (Bong.) Körn.

Additional bibliography: Moldenke, Phytologia 29: 302 (1974), 30: 18 (1975), and 31: 385. 1975; Hocking, Excerpt. Bot. A.26: 6. 1975.

**PAEPALANTHUS CANESCENS** var. **ATRATUS** Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.26: 6. 1975; Moldenke, Phytologia 33: 33. 1976.

**PAEPALANTHUS CAPANEMAE** Alv. Silv.

Additional bibliography: Fedde in Just, Bot. Jahresber. 46 (2): 651. 1929; Moldenke, Phytologia 33: 33—34. 1976.

Additional citations: BRAZIL: Goiás: Hatschbach 36867 (Ld.).

**PAEPALANTHUS CATHARINAE** Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 34. 1976.

Irgang & Fereira encountered this plant in "turfeira".

Additional citations: BRAZIL: Rio Grande do Sul: Irgang & Ferreira ICN.7398 (Ut—320398).

**PAEPALANTHUS CLAUSSENIANUS** Körn.

Additional bibliography: Moldenke, Phytologia 33: 35—36, 191, & 196. 1976.

Lasseigne found this plant growing in dry red soil. Mendes Magalhães refers to it as a frequent subshrub, 0.5—1 m. tall, in dry grassy campos.

Additional citations: BRAZIL: Distrito Federal: Lasseigne 4334 (Ld, N); Mendes Magalhães 18127 [Herb. Fac. Nac. Farmac. 5817] (Ld).

**PAEPALANTHUS COLUMBIENSIS** Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 30, 36, & 44 (1976) and 34: 276 & 281. 1976.

In addition to months previously reported, this plant has been found in fruit in August. Schulz and Rodríguez found it in "praderas & húmedas (al margen de un río), pastoreado; sitio rodeado por montañas", at 3700 m. altitude, and describe it as a "Hierba arosetada, frecuente sitios resguardados, muy húmedos, con musgos, entre Espeletia no. 539 y 538".

Additional citations: COLOMBIA: Boyacá: Schulz & Rodríguez Poveda 541 (Ld). Cauca: López-Palacios & Idrobo 3748 (Ld).

**PAEPALANTHUS COMOSUS** Alv. Silv.

Additional bibliography: Moldenke, Phytologia 29: 306 (1974)

and 30: 43. 1975.

Hatschbach encountered this plant "da base dos paredões de arenito, local sombrio", flowering and fruiting in February.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 36485 (Ld).

#### PAEPALANTHUS COMPLANATUS Alv. Silv.

Additional bibliography: Moldenke, Phytologia 26: 233—235. 1973.

Occhioni and his associates describe this plant as 20 cm. tall, with white flowers, and encountered it on "afloramento de quartzito", flowering in May.

Additional citations: BRAZIL: Minas Gerais: Occhioni, Elena, & Carmem s.n. [Herb. Fac. Nac. Farmac. 11423] (Ld).

#### PAEPALANTHUS COSTARICENSESIS Moldenke

Additional bibliography: Moldenke, Phytologia 33: 37. 1976.

Recent collectors have found this plant in flower and fruit in September and December. Material has been misidentified and distributed in some herbaria as P. ensifolius (H.B.K.) Kunth

Additional citations: COSTA RICA: Alajuela: J. León 1274 (W—2134413). San José: P. C. Standley 42135 (W—1251387, W—1251388). Province undetermined: O. Jiménez 38 [El Cañon] (W—2217521).

#### PAEPALANTHUS COUTOENSIS Moldenke

Additional bibliography: Moldenke, Phytologia 33: 37, 57, & 191 (1976) and 34: 258. 1976.

Kummrow encountered this plant on a "campo solo úmido e arenoso" and implies that his collection, at least, is only an immature example of P. polyanthus (Bong.) Kunth, which is very possible. Lindeman and Haas encountered it in a belt of outcropping rocks of Vila Velha arenite, flowering in October.

Additional citations: BRAZIL: Paraná: Kummrow 953 (Ld); Lindeman & Haas 2694 (Ld).

#### PAEPALANTHUS DIVARICATUS (Bong.) Kunth

Additional bibliography: Moldenke, Phytologia 29: 308 (1974), 30: 99 & 332 (1975), and 33: 191. 1976.

Occhioni describes this plant as 30 cm. tall and encountered it on dry sandy campos, flowering and fruiting in June.

Additional citations: BRAZIL: Minas Gerais: Occhioni 5515 [Herb. Fac. Nac. Farmac. 11177] (Ld).

#### PAEPALANTHUS ELONGATUS (Bong.) Körn.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 6. 1976; Moldenke, Phytologia 33: 39. 1976.

The Haases describe this plant as 30—80 cm. tall, the flower-heads cinereous, and found it growing in "pascuis ad basin montis, locis humidis", flowering and fruiting in September.

Additional citations: BRAZIL: Goiás: Haas & Haas 442 [Herb. Brad. 50551] (Ut—320409), 443 [Herb. Brad. 50552] (Ut—320408).

**PAEPALANTHUS ELONGATUS f. GRAMINIFOLIUS Herzog**

Additional bibliography: Moldenke, Phytologia 33: 39. 1976.

The Irwin & al. 13298 collection cited below is a mixture with *Syngonanthus euschemus* Ruhl.

Additional citations: BRAZIL: Goiás: Irwin, Grear, Souza, & Reis dos Santos 13298, in part (N).

**PAEPALANTHUS ELONGATUS var. LONGIBRACTEATUS Moldenke**

Additional bibliography: Hocking, Excerpt. Bot. A.26: 6. 1975; Moldenke, Phytologia 33: 39. 1976.

**PAEPALANTHUS ENSIFOLIUS (H.B.K.) Kunth**

Additional bibliography: Moldenke, Phytologia 33: 40. 1976

The P. C. Standley 42135, distributed as *P. ensifolius*, actually is *P. costaricensis* Moldenke

**PAEPALANTHUS ERECTIFOLIUS Alv. Silv.**

Additional bibliography: Moldenke, Phytologia 26: 481--482 (1973) and 34: 258. 1976.

Recent collectors describe this plant as an erect herb, 75 cm. to 1.5 m. tall, the stem simple, the flowering heads white or gray, and have found it growing in cerrado and "in wet campo and gallery margin", at altitudes of 300--550 m., flowering and fruiting in March, May, and October. Irwin and Soderstrom assert that it is "occasional" in distribution.

Material has been misidentified and distributed in some herbaria, and cited by me in previous installments of these notes, as *P. speciosus* (Bong.) Körn.

Additional citations: BRAZIL: Goiás: Hatschbach 38569 (Z).

Mato Grosso: Irwin, Grear, Souza, & Reis dos Santos 16017 (Ld, N, W—2759036); Irwin & Soderstrom 6552 (N).

**PAEPALANTHUS FASCICULATUS (Rottb.) Kunth**

Additional bibliography: Moldenke, Phytologia 33: 40 (1976) and 34: 258. 1976.

Prance and his associates found this plant growing on a "campina on white sand (regosol)", especially in "damp seepage patches", flowering in July and both flowering and fruiting in September, describing it as to 10 cm. tall. Ongley and Ramos found it on "terra firme on open campina", describing it as an herb, 8--12 cm. tall, green, the fertile stems white at the tip and slightly browning, in flower in April and June.

Additional citations: BRAZIL: Amazônas: Maas & Maas 462 (Ld); Ongley & Ramos P.21770 (Ld); Prance 23527 (Ld); Prance, Anderson, & Schubert 23501 (Ac); Prance, Berg, Bisby, Steward, Monteiro, & Ramos 17921 (Ld).

PAEPALANTHUS FASCICULATUS f. SPHAEROCEPHALUS Herzog

Additional bibliography: Moldenke, Phytologia 33: 40 (1976) and 34: 258. 1976.

Bunting and his associates describe this plant as an herb growing in set sand and in standing water, the flower-heads with a buff involucre and the flowers white.

Additional citations: VENEZUELA: Amazonas: Bunting, Akkermans, & Van Rooden 3765 (Ld). BRAZIL: Goiás: Hatschbach & Kummrow 38512 (Ld).

PAEPALANTHUS FASCICULATUS f. TENELLUS Herzog

Additional bibliography: Moldenke, Phytologia 29: 318 & 324. 1974.

Prance describes this plant as having "some stems prostrate and producing inflorescences along the stem, others upright and with terminal inflorescences only" and encountered it in secondary forests, flowering and fruiting in April. He misspells the authority surname "Hertzog". Campbell and his associates refer to it as herbaceous, 5--10 cm. tall, with white flower-heads, and found it growing on the ground in shade in the transition zone "between campina and terra firme", flowering in June.

Additional citations: BRAZIL: Amazônas: Prance 23710 (Ld, N). Pará: Campbell, Ongley, Ramos, Monteiro, & Nelson P.22538 (Ld).

PAEPALANTHUS FASCICULIFER var. CAPILLIFOLIUS Moldenke

Synonymy: Paepalanthus filifolius Moldenke, Phytologia 34: 258. nom. nud. 1976.

Additional bibliography: Moldenke, Phytologia 33: 41 (1976) and 34: 258. 1976.

PAEPALANTHUS FLACCIDUS (Bong.) Kunth

Additional bibliography: Moldenke, Phytologia 33: 32, 35, & 41 (1976) and 34: 258 & 276. 1976.

Hatschbach encountered this plant on "brejo, zona de cerrado".

Additional citations: BRAZIL: Mato Grosso: Hatschbach 37607 (Ld).

PAEPALANTHUS FOLIOSUS Körn.

Additional bibliography: Moldenke, Phytologia 29: 330 & 386--387. 1974; Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 30: 97 & 103 (1975) and 33: 191. 1976.

PAEPALANTHUS FORMOSUS Moldenke

Additional bibliography: Moldenke, Phytologia 29: 387 (1974) and 33: 191 & 192. 1976.

Prance and his associates refer to this plant as producing flowering stems to 1.6 m. tall and found it growing on cerrado at 720 m. altitude, in flower and fruit in October.

Additional citations: BRAZIL: Mato Grosso: Prance, Lleras, & Coêlho 19206 (Z).

**PAEPALANTHUS GARIMPENSIS Alv. Silv.**

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 42. 1976.

**PAEPALANTHUS GENTLEI Moldenke**

Additional bibliography: Moldenke, Phytologia 29: 478—479 (1974) and 30: 35. 1975.

Bartlett found this species growing on sandy uplands.

Additional citations: BELIZE: H. H. Bartlett 11874 (W-1493409).

**PAEPALANTHUS GLAREOSUS (Bong.) Kunth**

Additional & emended bibliography: Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 878 (1893), imp. 2, 1: 878 (1946), imp. 2: 2: 402 (1946), imp. 3, 1: 878 (1960), and imp. 3, 2: 402. 1960; Moldenke, Phytologia 29: 478 & 480—481. 1974.

**PAEPALANTHUS GONCALENSIS Alv. Silv.**

Additional bibliography: Moldenke, Phytologia 29: 484—485. 1974.

Mendes Magalhães found this plant in wet sandy places "con tampe de herbáceas", frequent in distribution, and with white flowers in April.

Additional citations: BRAZIL: Minas Gerais: Mendes Magalhães 6157 [Herb. Fac. Nac. Farmac. 6738] (Z).

**PAEPALANTHUS HYDRA Ruhl.**

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 43. 1976.

**PAEPALANTHUS HYMENOLEPIS Alv. Silv.**

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 43. 1976.

**PAEPALANTHUS ITATIAIENSIS Ruhl.**

Additional bibliography: Moldenke, Phytologia 33: 43. 1976.

The Eitens describe this as a plant with white inflorescence-heads and found it growing in "black humusy soil" among outcropping rocks, at 2350 m. altitude, on a plateau of "steep hilly terrain, many hills topped with mountainous outcrops of bare sienite quartz, the hillsides with frequent rounded outcroppings of quartz rocks and boulders and a thin, black, almost pure humus soil supporting a periodically burned natural tussock sedge grassland with scattered low Chusquea bamboo and occasionally other shrubs, the lower valley sides often with dense Chusquea brakes or brooks lined with a marsh of Cladium in tussocks or with trunks of massed rhizomes".

Additional citations: BRAZIL: Rio de Janeiro: Eiten & Eiten 6549 (N).

## PAEPALANTHUS JAUENSIS Moldenke

Additional bibliography: Anon., Ind. Bot. Guay. Highl. 16. 1972; Moldenke, Phytologia 30: 24. 1975.

## PAEPALANTHUS KARSTENII Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 43-46 (1976) and 34: 256 & 276. 1976.

The Schulz & Rodríguez Poveda 672, distributed as P. karstenii, seems better placed as var. corei Moldenke

## PAEPALANTHUS KARSTENII var. COREI Moldenke

Additional bibliography: Moldenke, Phytologia 33: 44-45 (1976) and 34: 256. 1976.

Schulz and his associates describe this plant and where they found it as follows: "formando colonias pequeñas (en forma  $\pm$  de almohadilla) en la estrata herbácea de páramo....vertiente hacia el N de una colina; buen drenaje; expuesto al influencia (viento, neblina) del valle de Sto. Domingo, veget. páramo abierto con estrato superior discontinuo de Espeletia schultzii y Hypericum ( $\pm$  1 m), estra. infer. herbáceo-gramíneo,  $\pm$  continuo; pastoreado ocasionalmente. En resguarda de Espeletia schultzii; formando una almohadilla de numerosas plantas unidas subterráneamente; capítulos de color crema oscura."

Additional citations: VENEZUELA: Mérida: Schulz & Rodríguez Poveda 672 (Ut--320388); Schulz, Rodríguez Poveda, & Sánchez 121 (Ut--320390).

## PAEPALANTHUS KARSTENII var. SUBSESSILIS (Moldenke) Moldenke

Additional bibliography: Moldenke, Phytologia 33: 45-46 (1976) and 34: 256, 257, & 276. 1976.

Wessels Boer found this plant in flower and fruit in December.

Additional citations: VENEZUELA: Mérida: Wessels Boer 2186 (Ut--320387).

## PAEPALANTHUS KUPPERI Suesseng.

Additional bibliography: Moldenke, Phytologia 33: 47. 1976.

Seidenschmür encountered this plant at 3300 meters, flowering in August.

Additional citations: COSTA RICA: San José: Seidenschmür 303 (N).

## PAEPALANTHUS LAMARCKII Kunth

Additional bibliography: Moldenke, Phytologia 33: 47, 51, & 184. 1976.

Davidse found this plant growing in mud with herbaceous vegetation in and around a "morichal" with standing water dominated by Mauritia flexuosa. McKee refers to it as having light-green leaves and "white" inflorescences and found it growing on very sandy soil with impeded drainage. Describing the inflorescences as "white" must certainly be an error -- they are almost black.

The J. A. Steyermark 57804 collection, cited by me in a previ-

ous installment of these notes, is a mixture with Syngonanthus gracilis (Bong.) Ruhl., while C. Wright 3742 is a mixture with P. alsinoides C. Wright.

Additional citations: BELIZE: Gentle 3780 (W-2087557); McKee 11378 (P). CUBA: Pinar del Río: Ekman 18121 (W-1301999). Province undetermined: C. Wright 3742, in part (W-936264), 3772 (W-46428). ISLA DE PINOS: Ekman 12015 (W-1301981). VENEZUELA: Guárico: G. Davidse 3808 (Ld.).

#### PAEPALANTHUS LANCEOLATUS Körn.

Additional bibliography: Moldenke, Phytologia 33: 47-48 & 130. 1976.

The Eitens describe this plant as having flower-heads "light-gray around [the] edge, white in [the] center" and found it to be "common in clumps" on rocky knolls with very fine sand, light-gray because of a small humus content, at 1200 m.-altitude.

Additional citations: BRAZIL: Minas Gerais: Eiten & Eiten 6784 (N).

#### PAEPALANTHUS LODICULOIDES var. FLOCCOSUS Moldenke

Additional bibliography: Moldenke, Phytologia 33: 49 & 50, fig. 2 (1976) and 34: 256. 1976.

Illustrations: Moldenke, Phytologia 33: 50, fig. 2. 1976.

Additional citations: COLOMBIA: Boyacá: Cleef, Cuatrecasas, & Jaramillo Mejia 9214 (Z--isotype, Z--photo of type).

#### PAEPALANTHUS MANICATUS V. A. Pouls.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 35 & 51. 1976.

#### PAEPALANTHUS MERIDENSIS Klotzsch

Additional bibliography: Moldenke, Phytologia 30: 79-80. 1975.

Wessels Boer and his associates came upon this plant in a disturbed cloud forest and report that it was growing "in a cespitose manner" along a swampy creeklet, flowering in March.

Additional citations: VENEZUELA: Táchira: Wessels Boer, Teunissen, & Wildschut 2431 (Ld.).

#### PAEPALANTHUS MESETICOLA Moldenke & Steyermark. (in press)

Citations: VENEZUELA: Bolívar: Steyermark, Espinoza, & Brewer-Carias 109389 (Z--type).

#### PAEPALANTHUS OVATUS Körn.

Additional bibliography: Moldenke, Phytologia 33: 52, 53, 55, & 144. 1976.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 36547 (N).

**PAEPALANTHUS PILOSUS (H.B.K.) Kunth**

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 54--55 & 144. 1976.

**PAEPALANTHUS PLANIFOLIUS (Bong.) Körn.**

Additional bibliography: Moldenke, Phytologia 33: 55. 1976

The Eitens refer to the flowers of this species as white and found it growing "in open saturated marshy soil in wet open rolling terrain with scattered shrubs and small trees and groves of these, the original vegetation here was continuous submontane rainforest". Lindeman and Haas encountered it on rocky campos.

Additional citations: BRAZIL: Paraná: Lindeman & Haas 2450 (Ld), 3034 (Ld). São Paulo: Eiten & Eiten 5042 (W-2729346).

**PAEPALANTHUS PLANIFOLIUS var. CONDUPPLICATUS Ruhl.**

Additional bibliography: Moldenke, Phytologia 30: 256--258 & 260. 1975.

Hatschbach encountered this plant on a "campo junta a filete de agua", flowering and fruiting in September.

Additional citations: BRAZIL: Paraná: Hatschbach 37105 (Ld).

**PAEPALANTHUS PLANIFOLIUS var. CONSANGUINEUS (Körn.) Ruhl.**

Additional bibliography: C. Müll. in Just, Bot. Jahresber. 16 (1): 770. 1888; Moldenke, Phytologia 33: 55. 1976.

**PAEPALANTHUS PLANTAGINEUS (Bong.) Körn.**

Additional bibliography: C. Müll. in Just, Bot. Jahresber. 16 (1): 770. 1888; Moldenke, Phytologia 33: 53, 55, & 144. 1976.

**PAEPALANTHUS POLYANTHUS (Bong.) Kunth**

Additional bibliography: C. Müll. in Just, Bot. Jahresber. 16 (1): 770. 1888; Moldenke, Phytologia 33: 56, 131, 188, & 191 (1976) and 34: 276. 1976.

Rambo (1950) comments: "Esta bela espécie, frequente no litoral catarinense, parece ter o seu limite meridional nos arredores de Torres, onde foi colhida por Reitz; pessoalmente encontrei no RGS [Rio Grande do Sul]. Segundo Ruhland.....teria sido encontrado 'em lugares húmidos no RGS' por Sellow, levando o número 1,934. Como os números Sellowianos 1293--1503 são duma excursão ao Rio Pardo no centro do Rio Grande; e como esta espécie posteriormente jamais foi vista por outro botânico em tal região, tenho as minhas dúvidas a respeito desta indicação." Other recent collectors have encountered it in open vegetation on plateaus and on burned slopes with many herbs and low shrubs and describe it as having a dense basal rosette [of leaves], stems 2 cm. in diameter, and about 10 lateral branches. Lindeman says "ervas com roseta e racemo curto de umbelas".

In addition to the months previously reported by me, this plant has been found in fruit in April.

Additional citations: BRAZIL: Rio de Janeiro: Lindeman & Haas 4169 (Ac), 5170 (Ut-320403). Rio Grande do Sul: Lindeman ICN.

20912 (Ut—320391).

## PAEPALANTHUS POLYANTHUS var. TOMENTOSUS Alv. Silv.

Synonymy: Paepalanthus speciosus var. tomentosus Alv. Silv. ex Moldenke, Phytologia 33: 191, sphalm. 1976.

Additional bibliography: Moldenke, Phytologia 30: 274 & 276—277 (1975), 33: 191 (1976), and 34: 276. 1976.

## PAEPALANTHUS POLYTRICHOIDES Kunth

Additional bibliography: Hocking, Excerpt. Bot. A.26: 90. 1975; Moldenke, Phytologia 33: 56—57. 1976.

Additional citations: BRAZIL: Minas Gerais: E. Pereira 5007 [Herb. Fac. Nac. Farmac. 7155] (Ld).

## PAEPALANTHUS PSEUDOTORTILIS Ruhl.

Additional bibliography: Moldenke, Phytologia 30: 322. 1975.

Lindeman and Haas came upon this plant in low vegetation in a moist mountain saddle, at 2400 m. altitude, flowering and fruiting in April.

Additional citations: BRAZIL: Rio de Janeiro: Lindeman & Haas 5188 (Ut—320404).

## PAEPALANTHUS PULLUS Körn.

Additional bibliography: Moldenke, Phytologia 30: 325—327 (1975) and 34: 259. 1976.

Luna Peixoto describes this plant as "heliofila, frecuente, capitulo branco".

Additional citations: BRAZIL: Espirito Santo: Luna Peixoto 367 [Araujo & Peixoto 616; Herb. Jard. Bot. Rio Jan. 169709] (Z).

## PAEPALANTHUS PUNGENS Griseb.

Additional bibliography: Moldenke, Phytologia 33: 57 (1976) and 34: 254. 1976.

Ekman asserts that this species is very rare in Oriente. The López Figueiras 2843, distributed as P. pungens, is actually P. brittoni Moldenke.

Additional citations: CUBA: Oriente: Ekman 2187 (W—1302384), 2341 (W—1302387), 9121 (W—1302490).

## PAEPALANTHUS RAMOSUS (Wikstr.) Kunth

Additional bibliography: Moldenke, Phytologia 33: 37, 57, 188, & 191. 1976.

Saddin describes this plant as a subshrub, about 70 cm. tall, with white flowers. He found it in "restinga baixa", sandy soil, flowering in August.

Additional citations: BRAZIL: Guanabara: Saddin 1165 [Herb. Fac. Nac. Farmac. 8904] (Ld); Strang 1006 [Castellanos 26308; Herb. Brad. 45560] (N).

PAEPALANTHUS RAMOSUS var. AFFINIS (Bong.) Ruhl.

Additional bibliography: Moldenke, Phytologia 30: 331-334 (1975) and 31: 392, 397, & 403. 1975.

Recent collectors have found this plant in flower and fruit in May.

Additional citations: BRAZIL: Bahia: Lanna Sobrinha 1437 [Herb. Brad. 60604] (Ld).

PAEPALANTHUS REPENS (Lam.) Körn.

Additional bibliography: Moldenke, Phytologia 30: 337-339. 1975; Liogier, Bol. Jard. Bot. Raf. Moscoso 3 (2): 2. 1976

PAEPALANTHUS RETUSUS C. Wright

Additional bibliography: Moldenke, Phytologia 33: 58. 1976

Additional citations: CUBA: Pinar del Rio: Ekman 11064 (W-1302529).

PAEPALANTHUS SAXICOLA var. CONICUS Moldenke

Additional bibliography: Moldenke, Phytologia 33: 137--139. 1976.

Bunting and his associates describe this perplexing plant as a "delicate herb in wet sand and standing water", the peduncles "nearly white-puff", the heads white, and speak of it as common at 125-140 m. altitude, apparently growing in association with Syngonanthus comosus Alv. Silv., and fruiting in July. Schultes and Cabrera found it growing as "tufts in water", flowering and fruiting in September. The plant has much the aspect of the genus Carpotepala.

Additional citations: COLOMBIA: Vaupés: Schultes, Baker, & Cabrera 17987 (Z); Schultes & Cabrera 17564 (N), 17586 (Ss). VENEZUELA: Amazonas: Bunting, Akkermans, & Van Rooden 3738a (Ld.).

PAEPALANTHUS SCHENCKII V. A. Pouls.

Additional synonymy: Paepalanthus schenkii Pouls. apud C. Müll. in Just, Bot. Jahresber. 16 (1): 769 & 770. 1888.

Additional bibliography: C. Müll. in Just, Bot. Jahresber. 16 (1): 769 & 770. 1888; Moldenke, Phytologia 33: 141 (1976) and 34: 276. 1976.

PAEPALANTHUS SCHUECHIANUS Körn.

Additional bibliography: Moldenke, Phytologia 33: 143-144 (1976) and 34: 259. 1976.

Lindeman found this plant growing in a restinga, flowering and fruiting in July.

Additional citations: BRAZIL: Rio de Janeiro: Lindeman 6345 (Z).

PAEPALANTHUS SCIRPEUS Mart.

Additional bibliography: Moldenke, Phytologia 33: 146-147 (1976); P. Morat, Adansonia, ser. 2, 15: 464. 1976.

## PAEPALANTHUS SENAEANUS Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 151--152. 1976.

Recent collectors describe this plant as an herb, 20--30 cm. tall, with white flowers, and have found it growing on quartzite and on "afloramento de cascalho e quartzo ou arenoso", flowering in May.

Additional citations: BRAZIL: Minas Gerais: Occhioni, Elena, & Carmem s.n. [Herb. Fac. Nac. Farmac. 11401] (Ld); Occhioni & Occhioni s.n. [Herb. Fac. Nac. Farmac. 11405] (Ld); Occhioni, Carmem, & Elena s.n. [Herb. Fac. Nac. Farmac. 11406] (Ld).

## PAEPALANTHUS SESLERIOIDES Griseb.

Additional synonymy: Dupatyia seslerioides Griseb., in herb.

Additional bibliography: Moldenke, Phytologia 33: 183--185. 1976.

Recent collectors have encountered this plant in dry sandy pinelands, on dry sand, on savannas, and in grayish-white sand of pinelands, flowering and fruiting in September, October, December, and January.

The Bartsch s.n. [April 1, 1937] and Killip 43683, 44544, & 44638, distributed as the typical form of P. seslerioides, represent var. carabiae Moldenke instead, while Ekman 11031, Killip 45363, and Morton 10074 are var. wilsonii Moldenke.

Additional citations: CUBA: Pinar del Río: Alain 2587 (W-2284319); Fritton, Britton, & Gager 7251 (W-696938); Ekman 17803 (W-1302713); León 17433 (W-1784918); Shafer 10882 (W-699168), 10956 (W-699199). ISLA DE PINOS: Britton, Britton, & Wilson 14225 (W-793071), 14319 (W-793092); Killip 45610 (W-2226403).

## PAEPALANTHUS SESLERIOIDES var. CARABIAE Moldenke, Phytologia 34: 485. 1976.

Bibliography: Moldenke, Phytologia 34: 485. 1976.

Collectors have found this plant growing on white sand savannas and in white quartz sand of pine barrens, forming clumps or cushions, flowering and fruiting from January to May. Killip 44054 is smaller and resembles var. wilsonii.

Most of the material cited below was originally distributed and even previously cited by me as typical P. seslerioides Griseb.

Citations: ISLA DE PINOS: Bartsch s.n. [April 11, 1937] (W-1559729); Carabia 1083 (Cr, N), 3930 (Cr, N), 3941 (Cr, N), 3995 (Cr, N); O. E. Jennings 338 (Cr, N); Killip 43683 (W-2175763), 44054 (W-2176129), 44544 (W-2112708), 44638 (W-2112780), 45610 (W-2226403); León & Seifriz 17520 (Ha, N); León & Victorin 18856 (Ha, W-1784925).

PAEPALANTHUS SESLERIOIDES var. WILSONII Moldenke, Phytologia 34: 485. 1976.

Bibliography: Moldenke, Phytologia 34: 485. 1976.

Collectors have encountered this plant on savannas, in "shady places", in white or white siliceous sand, in pinelands, on sandy savannas, and on white-sand savannas, flowering and fruiting from January to March and in May.

Most of the material cited below was originally distributed as and even previously cited by me as typical P. seslerioides Griseb. Killip, with his keen eye to spot morphological differences in plant populations, was the first to point out the existence of definite varieties or forms in this species and labeled his no. 43819 as "Paepalanthus seslerioides Griseb. sens. lat."

Citations: CUPA: Oriente: C. Wright 748 (N). Pinar del Rio: Ekman 11031 (S, S. W--1301976). ISLA DE PINOS: Britton, Britton, & Gager 7131 (N, W--696903); Britton, Britton, & Wilson 14225 (Cm--isotype, N--type, W--793071--isotype, S--isotype), 14319 (Cm, S, W--793082); Britton & Wilson 14319 (N), 15689 (Cm, N, W--793590); Carabia 999 (Cr, N), 3949 (Cr, N); Killip 43819 (N, W--2175955), 43881 (W--2175994), 45363 (B, Mu, W--2226208); Leon 17520 (Ha, N); C. V. Morton 10074 (W--2351391).

PAEPALANTHUS SPECIOSUS var. ATTENUATUS Moldenke

Additional bibliography: Moldenke, Phytologia 33: 192 & 194. 1976.

Additional citations: BRAZIL: Distrito Federal: Duarte 10164 [Herb. Fac. Nac. Farmac. 14090] (Ld.).

PAEPALANTHUS STEYERMARKII Moldenke

Additional bibliography: Moldenke, Phytologia 33: 272--273. 1976.

Davidse encountered this species "on open savanna with Trachypogon, Echinolaena, and Paspalum dominat and with a narrow zone of gallery forest along river, soil with top 20 cm. sand and organic material mixture, 1 m. of white sand below which is yellow sand", at 1300 m. altitude, flowering and fruiting in December.

Additional citations: VENEZUELA: Bolívar: G. Davidse 4681 (Ld.).

PAEPALANTHUS SUBCAULESCENS N. E. Br.

Additional bibliography: N. E. Br., Trans. Linn. Soc. Lond. Bot., ser. 2, 6: 71. 1901; Ruhl. in Engl., Pflanzenreich 13 (4-30: 124, 134, & 292. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Herzog in Fedde, Repert. Spec. Nov. 29: 207. 1931; Moldenke, Known Geogr. Distrib. Erioc. 6, 54, & 60. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 64, 66, & 211. 1949; Moldenke, Résumé 72, 75, 328, & 490. 1959; Moldenke, Phytologia 20: 297. 1970; Moldenke, Fifth Summ. 1: 126 & 130 (1971) and 2: 591 & 958.

1971; Moldenke, Phytologia 29: 483 (1974), 30: 106 (1975), and 33: 275. 1976.

This species is based on McConnell & Quelch 153 & 300 from the Kotinga Valley and "savannas generally" in the Roraima Mountains of Guyana, deposited in the herbarium of the Royal Botanic Gardens at Kew. Brown (1901) comments that this is "A very distinct species, bearing a resemblance to P. uncinatus, Gardn., in stem and foliage, but with very different flower-heads. It might be placed near P. plantagineus, Koern." Ruhland (1903) says "Speciem non vidi, ex cl. Brown P. uncinata Gardn. foliis et caule similis, sed capitulis longe diversa et proxime ad P. plantagineum ducenda". Gleason, in his unpublished Flora of British Guiana, cites from the "Roraima region, Schomburgk 713, 1026 B, Appun 1405, Quelch & McConnell 153, 300" and affirms the species as "Endemic" to that region. Presumably the Appun and Schomburgk specimens cited by Gleason are deposited in the Kew herbarium.

Ruhland (1903) cites the original publication of this binomial as "N. E. Br. in Trans. Linn. Soc. VI. 1. (1901) 71", but the description is actually in series 2, volume 6, of this periodical.

The species apparently bears great superficial similarity in habit and habitat to P. densifolius Alv. Silv. and P. oyapockensis Herzog.

Citations: GUYANA: Quelch & McConnell 153 [N. Y. Bot. Gard. type photo neg. 5005, in part] (K--cotype, N--photo of cotype, W--photo of cotype), 300 [N. Y. Bot. Gard. type photo neg. 5005, in part] (K--cotype, N--photo of cotype, W--photo of cotype).

PAEPALANTHUS SUBFALCATUS Ruhl. in Engl., Pflanzenreich 13 (4-30): 151. 1903.

Synonymy: Paepalanthus subfulcatus Ruhl. ex Moldenke, Phytologia 31: 405, in syn. 1975.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 128, 151, & 292. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Alv. Silv., Fl. Mont. 1: 414. 1928; Moldenke, Known Geogr. Distrib. Erioc. 16 & 54. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 88 & 211. 1949; Moldenke, Résumé 102 & 490. 1959; Moldenke, Fifth Summ. 1: 167 (1971) and 2: 958. 1971; Moldenke, Phytologia 31: 405. 1975.

This species is based on Glaziou 19958 from near Diamantina, in the Serra dos Cristaes, Minas Gerais, Brazil, flowering in April, and deposited in the Berlin herbarium where it was photographed by Macbride as his type photograph number 10652. Ruhland (1903) cites only this one collection, but comments that the "Species a P. falcato Koern. proxima. Differt autem ab illo praesertim bracteis involucrantibus dorso non persistenter pilosis, habitu robustiore, foliis etc." Silveira (1928) cites A. Silveira 601 from Muticas, Minas Gerais, collected in 1912.

Irwin and his associates describe P. subfalcatus as a cespitose rosette herb, 20—50 cm. tall, the heads white or "pale yel-

low-brown", and found it growing on wet campos in regions of cerrado interspersed with wet rocky campo, at altitudes of 950--1200 meters, flowering in February.

Citations: BRAZIL: Minas Gerais: Glaziou 19958 [Macbride photos 10652] (B--type, N--photo of type, N--photo of type, Z--isotype); Irwin, Maxwell, & Wasshausen 21003 (N); Irwin, Reis dos Santos, Souza, & Fonsêca 23355 (N, Z).

PAEPALANTHUS SUBFALCATUS var. VILLOSUS Moldenke, Phytologia 21: 418. 1971.

Bibliography: Moldenke, Phytologia 21: 418. 1971; Moldenke, Fifth Summ. 2: 958 & 968. 1971.

Citations: BRAZIL: Minas Gerais: Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 28201 (N--isotype, Z--type).

PAEPALANTHUS SUBTILIS Miq., Stirp. Surin. 221, pl. 65b. 1850.

Synonymy: Paepalanthus subulatus Klotzsch in Schomb., Faun. & Fl. [Reise] Brit. Guian. 3: 1116. 1848. Eriocaulon subtile (Miq.) Steud., Syn. Pl. Glum. 2: [Cyp.] 281. 1855. Eriocaulon subtile Benth. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 334. 1855. Eriocaulon subtile Miq. ex Steud., Syn. Pl. Glum. 2: [Cyp.] 281. 1855. Eriocaulon arenarium Salzm. ex Körn. in Mart., Fl. Bras. 3 (1): 358, in syn. 1863 [not E. arenarium G. Gardn., 1842, nor Hardn. & Hook., 1855, nor Hook., 1855, nor Mart., 1903]. Eriocaulon aciphyllum Reichenb. ex Körn. in Mart., Fl. Bras. 3 (1): 358, in syn. 1863 [not E. aciphyllum Bong., 1831]. Paepalanthus subtilis var. Y Körn. in Mart., Fl. Bras. 3 (1): 358--359. 1863. Dupatya subtilis (Miq.) Kuntze, Rev. Gen. Pl. 2: 746. 1891. Eriocaulon subtile Steud. ex Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 879. 1893. Dupatya subtilis Kuntze apud Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 145. 1902. Adelopus humilis Hoffmigg. ex Moldenke, Résumé 227, in syn. 1959.

Bibliography: Schomb., Faun. & Fl. [Reise] Brit.-Guian. 3: 1116. 1848; Miq., Stirp. Surin. 221, pl. 65b. 1850; Miq., Naturk. Verh. Holl. Maatsch. Wet. Haarl., ser. 2, 7: 65. 1851; Walp., Ann. Bot. Syst. 3: 662 (1852) and 3: 1093. 1853; Steud., Syn. Pl. Glum. 2: [Cyp.] 281 & 334. 1855; Körn. in Mart., Fl. Bras. 3 (1): 281, 358--359, 464, 505, & 507. 1863; Kuntze, Rev. Gen. Pl. 2: 746. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 877 & 879 (1893) and imp. 1, 2: 402. 1894; N. E. Br., Trans. Linn. Soc. Lond. Bot., ser. 2, 6: 72. 1901; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 145. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 12, 152, 157, 284, 287, & 292. 1903; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 41. 1930; Stapf, Ind. Lond. 4: 519. 1930; Uittien & Heyn in Pulle, Fl. Surin. 1 [Meded. Konink. Ver. Ind. Inst. 30, Afd. Handelmus. 11]: 216 & 219. 1938; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 2, 145. 1941; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 877 & 879 (1946) and imp. 2, 2: 402. 1946; Moldenke, Known Geogr. Distrib. Erioc. 6, 7, 16, 31, 32, 40, 52, &

54, & 60. 1946; Moldenke in Maguire & al., Bull. Torrey Bot. Club 75: 199. 1948; Moldenke, Alph. List Cit. 3: 701, 744, 956, & 975. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 64, 66, 67, 88, & 212. 1949; Moldenke, Phytologia 4: 205. 1953; Moldenke in Steyermark, Fieldiana Bot. 28: 824 & 825. 1957; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 145. 1959; Moldenke, Résumé 72, 75, 77, 102, 227, 282, 285, 293, 327, 328, & 490. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 877 & 879 (1960) and imp. 3, 2: 402. 1960; Moldenke, Résumé Suppl. 7: 4. 1963; Van Donselaar, Wentia 14: 70. 1965; Huinink, Wentia 17: 138--139. 1966; J. A. Steyermark, Act. Bot. Venez. 1: 223. 1966; Moldenke, Phytologia 20: 297. 1970; Teunissen & Wildschut, Verh. Konink. Nederl. Akad. Wet. Natuurk. 59 (2): 23, 33, & table 1. 1970; Moldenke, Fifth Summ. 1: 126, 130, 132, 167, 377, & 486 (1971) and 2: 492, 514, 589, 591, & 958. 1971; Teunissen & Wildschut, Meded. Bot. Mus. Utr. 341: 23, 33, & table 1. 1971; Moldenke, Phytologia 28: 439 (1974), 30: 107, 109, 110, 113, 279, 280, 317, & 318 (1975), and 31: 405. 1975.

Illustrations: Miq., Stirp. Surin. pl. 65b. 1850; Miq., Naturk. Verh. Holl. Maatsch. Wet. Haarl., ser. 2, 7: pl. 65. 1851.

Recent collectors describe this plant as a delicate annual herb or small forb, to 10 cm. tall, the leaves wiry and green, and the inflorescence capitate, the heads white or gray. They have found it growing on open or wet sand, damp white sand, dry sandy places, and white sand of clearings, on savannas, sandy savannas, large sand savannas, and sandy beaches, dry sandy uplands, dry campos, and "campos cerrados", in open xeromorphic scrub on white sand, in rock crevices in shade on rocky hillsides, among rock outcrops, and frequent in sandy soil of open places on islands in river rapids, at altitudes of 100—1400 meters, flowering from November to September, and fruiting in March, August, November, and December. A vernacular name recorded for it is "aribá-panárukusí". It is said to be a member of the Polycarpaeo-Trachypogonetum cyperetosum and Mesoseto-Trachypogonetum ecologic associations.

As of now, the species is known from southern Venezuela, Guyana, and Surinam south to northern Brazil.

The Eriocaulon arenarium credited to Gardner, to Gardner & Hooker, or to Hooker in the synonymy cited above belongs in the synonymy of Syngonanthus arenarius (G. Gardn.) Ruhl., E. arenarium Mart. is a synonym of Paepalanthus parvus Ruhl., and E. aciphyllum Bong. is now known as Syngonanthus aciphyllus (Bong.) Ruhl.

Paepalanthus subulatus Klotzsch is based on R. Schomburgk 236 from Guyana in the Berlin herbarium; Adelopus humilis is based on Sieber s.n. from Pará in the Brussels herbarium.

Uittien & Heyn (1938) cite Huber 1616 from Guyana and Focke 1319, Pulle 539, and Went 367 from Surinam. Gleason, in his unpublished Flora of British Guiana, says that the species is found on "Sandy soil and savannas, probably throughout [Guyana]" and cites from the Kew herbarium Appun 1551, Clarke s.n., Jenman 5170 & 7277, Loyed s.n., Quelch & McConnell 312, and Schomburgk 236 & s.n. [to be continued]